L 2708-66

ACCESSION NR: AP5017183

perature at which a $\beta \rightleftharpoons \gamma$ phase transition takes place, and to grow Zn_3Sb_2 single crystals, with no success whatever. Orig. art. has: 10 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 150ct63 ENCL: 00 SUB CODE: SS

NR REF SOV: 012 OTHER: 008

Card 2/2

L 3784-66 EWT(m)/EPF(c)/EWP(t)/EWP(b) IJP(c) JD/WB

ACCESSION NR: AP5014140 UR/0365/65/001/003/0340/0342 44

546.3-19'48'86

620.193'

41

AUTHOR: Shatalov, A. Ya.; Tsygankova, L. Ye.; Ugay, Ya. A. 44,55 44,55 44,55 03

TITLE: Anodic oxidation and corrosion resistance of cadmium-antimony alloys 14 44,55 14 27 27

SOURCE: Zashchita metallov, v. 1, no. 3, 1965, 340-342

TOPIC TAGS: cadmium alloy, antimony alloy, corrosion resistance, anodic oxidation

ABSTRACT: The authors study the behavior of cadmium-antimony alloys during anodic oxidation in silutions of various composition. The corrosion resistance of this system was studied in detail in a previous paper (*Zh. fiz. khimii*, 1964, 38, 1501). The rate of anodic oxidation for this system is experimentally plotted as a function of alloy composition in buffer solutions with various pH values. The solutions are mixtures of 0.1*N* $Na_2B_4O_7$ and 0.1*N* NaOH taken in definite proportions. A direct relationship is found between oxidation rate and corrosion resistance in these alloys. In the Sb-content range from 52 to 92 wt. % the rate of anodic oxidation

Card 1/2

L 3784-66
ACCESSION NR: AP5014140

3

reaches a maximum with a simultaneous sharp reduction in the self-dissolution of these alloys which takes place when the limit of corrosion resistance is passed. This region is reflected on the phase diagram by the stable intermetallic compound CdSb and a heterophase alloy with an excess of antimony. Since the corrosion resistance of antimony-rich Cd-Sb alloys is highest, it is concluded that the capacity for anodic oxidation is directly connected with the protective properties of the oxide film which is formed, and consequently this capacity is determined by the structure of the film and by the composition of the solution in which the process takes place. The alloys have the capacity for anodic oxidation only in those pH regions where the oxide film is stable. Orig. art. has: 2 figures.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 01Oct64 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 000

Card 2/2

L 62492-65 EPF(c)/EWT(m)/EWP(t)/EWA(d)/EWP(t) IJP(c) JD/WB

ACCESSION NR: AT5017747 UR/0365/65/001/004/0406/0409

AUTHOR: Marshakov, I. K.; Ugay, Ya. A.; Vigdorovich, V. I. 44,55 44,55 B

TITLE: The mechanism of corrosion failure of alloys of the magnesium-copper system 44,55 27 21

SOURCE: Zashchita metallov, v. 1, no. 4, 1965, 406-409

TOPIC TAGS: corrosion resistant metal, magnesium base alloy, magnesium containing alloy, copper base alloy, copper containing alloy, sodium chloride, electrochemistry

ABSTRACT: Fifteen samples were tested, with copper content (weight %) varying from zero to 99.9%. The corrosion tests were carried out in solutions of 0.5 N sodium chloride, 0.5 N sodium bromide and 0.1 N hydrochloric acid. The corrosion rate was calculated from the amount of magnesium and copper going into electrolyte. [illegible]

Card 1/2

L 62492-65

ACCESSION NR: AP5017747

region. The rate of failure in bromide solutions is considerably smaller than in

tallic compounds, MgZn and MgCd

plained by the fact that, [illegible] volts), only the magnesium atoms undergo ionization, and the surface layer of the

sity)

SUBMITTED: 26Sep64 ENCL: 00 SUB CODE: MM

NR REF SOV: 003

Card 2/2

L 06340-67 EWT(m)/EWP(t)/ETI IJP(c) JH/JD/WB

ACC NR: AP6030320 SOURCE CODE: UR/0153/66/009/003/0396/0400

AUTHOR: Vigdorovich, V. I.; Marshakov, I. K.; Ugay, Ya. A. 40 13

ORG: Physical Chemistry Department, Voronezh State University (Kafedra fizicheskoy khimii, Voronezhskiy gosudarstvennyy universitet)

TITLE: Corrosion behavior of magnesium-antimony alloys in halide solutions

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 3, 1966, 396-400

TOPIC TAGS: corrosion, magnesium alloy, antimony alloy, CORROSION RATE, ALLOY PHASE DIAGRAM, HALIDE

ABSTRACT: The object of the work was a systematic study of the corrosion and electrochemical properties of magnesium-antimony alloys and their relationship to the phase diagram. The system contains the intermetallic compound Mg_3Sb_2, a semiconductor. The composition and structure of the alloys (which all exhibited a p-type conductivity) were checked by chemical and metallographic analysis. The corrosion behavior was studied in 0.5 N NaCl, 0.5 N NaBr and 0.1 N HCl at room temperature. The corrosion rate was found to increase with decreasing pH. In alloys containing up to 77% Sb, it is determined by the work of Mg-Mg_3Sb_2 phase microcells, whose electrodes have a considerable potential difference. This work is controlled by the cathodic reaction of hydrogen reduction. The corrosion of alloys containing more than 77% Sb occurs in neutral solutions with oxygen depolarization at a slow rate which is largely determined by the spontaneous dissolution of the phase components. X-ray structural data

Card 1/ UDC: 620.193

indicate that the corrosion of the intermetallic compound Mg_3Sb_2 involves two simultaneous processes:

(1) $Mg_3Sb_2 \rightarrow Mg^{2+}$ (Mg_3Sb_2 defect lattice) $\rightarrow Mg^{2+} + Sb$ film

(2) $Mg_3Sb_2 \rightarrow Mg^{2+} + Sb^{3+}$.

Since the Sb content of the solution is 1.5-10%, 86 to 98% of the destruction of Mg_3Sb_2 is due to reaction (1). Orig. art. has: 4 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 11Sep64/ ORIG REF: 001/ OTH REF: 002

L [illegible]

ACCESSION NR: AP5016580 UR/0363/65/001/005/0663/0667
546.682'181.1

AUTHOR: Ugay, Ya. A.; Zaval'skiy, Yu. P.; Ugay, V. A.; Bolkhovitina, N. F.

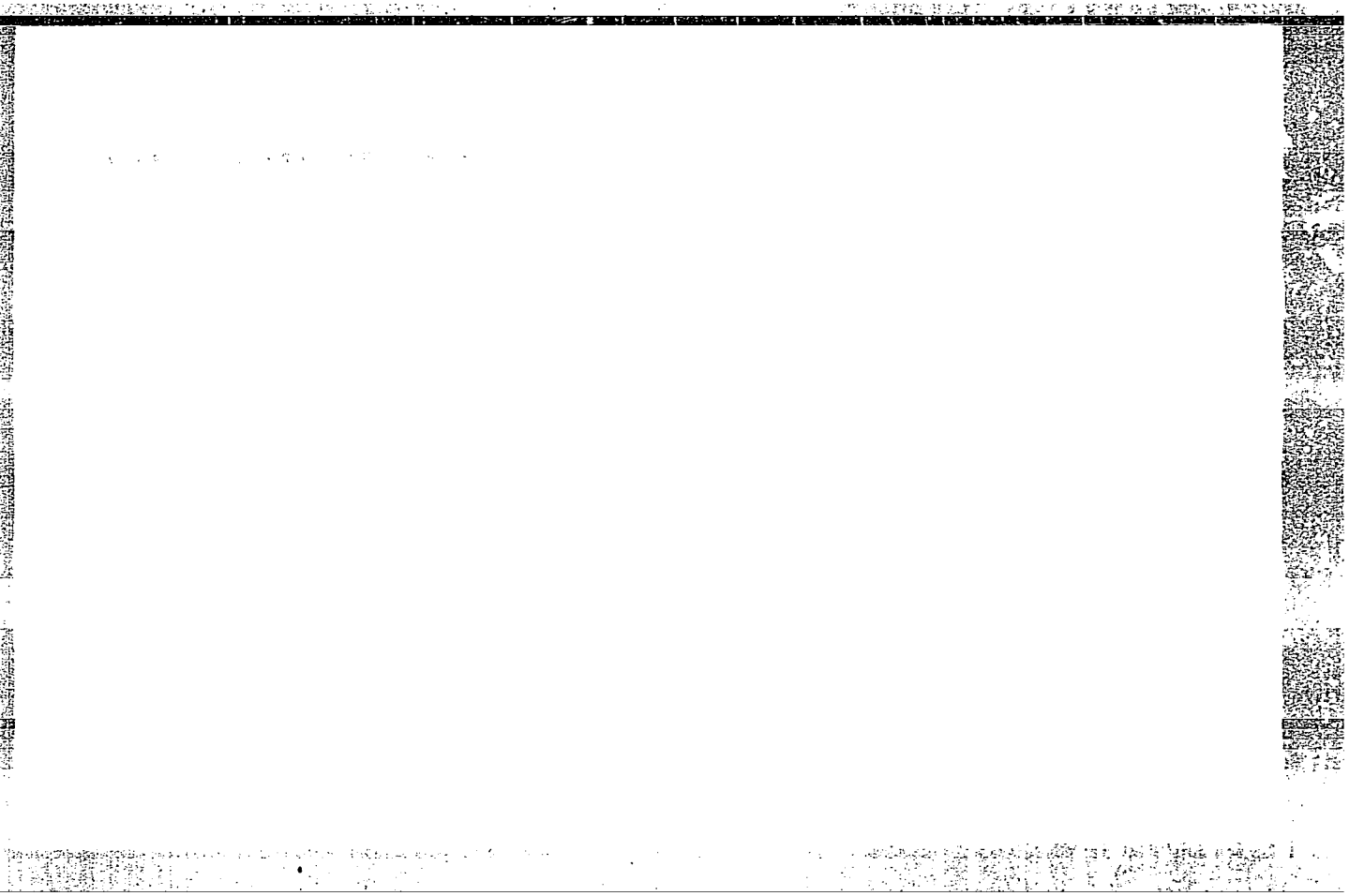
TITLE: Preparation by precipitation and certain properties of indium phosphide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 5, 1965, 663-667

TOPIC TAGS: indium phosphide, stoichiometric indium phosphide, pre-

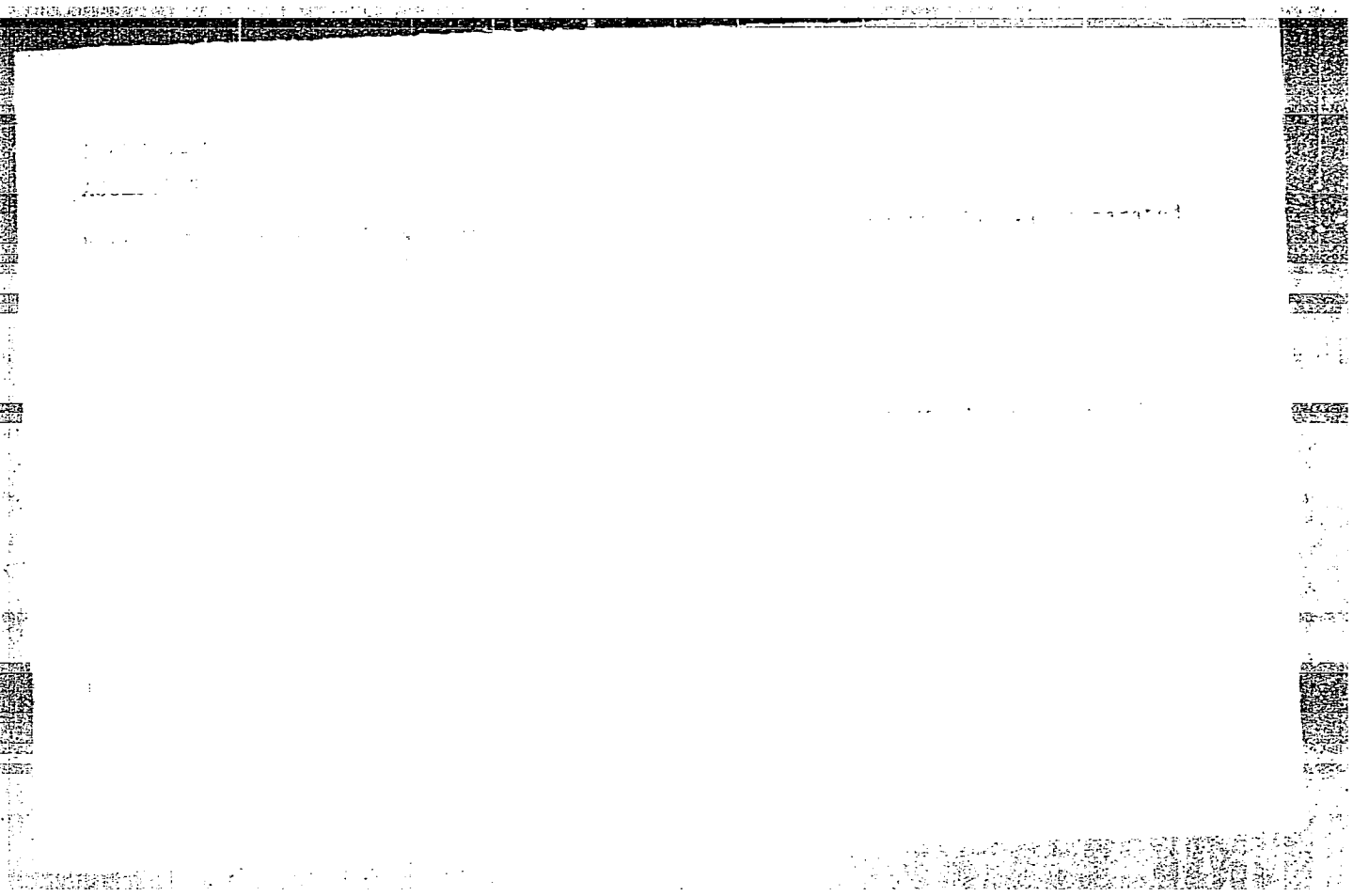
ACCESSION NR: AP5016580

and intrinsic conductivity. A comparative study of the electronic



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820012-7"

boat placed inside an evacuated quartz ampul. Most of the Bi was separated gravitationally from GaP crystals in the process of cooling through an orifice in the graphite



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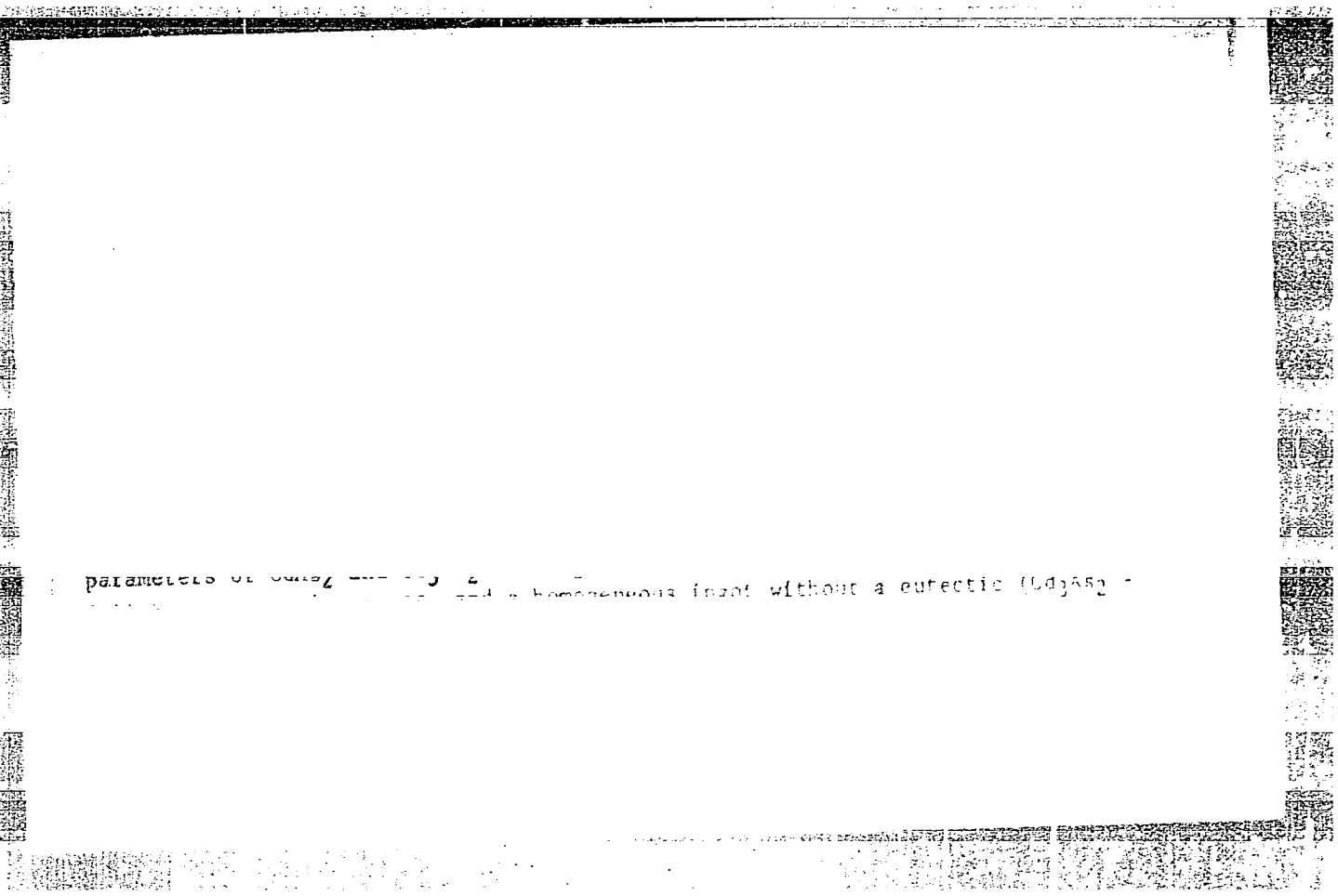

producibility of the measurements during [illegible]
$CdAs_2$ do not dissociate in the solid phase. Orig. art. has: 10 figures and
[illegible]

NO REF SOV: 002 OTHER: 014

Card 2/2

UGAY, Ya.A.; ZYUBINA, T.A.

Preparation and electric properties of semiconductor poly and single crystals of $CdAs_2$ and Cd_3As_2. Izv. AN SSSR. Neorg. mat. 1 no.6:860-867 Je '65. (MIRA 18:8)

1. Voronezhskiy gosudarstvennyy universitet.

L 1855-66 EWT(l)/EPA(s)-2/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) IJP(c)
JD/WW/JG/GG

ACCESSION NR: AP5022252

UR/0363/65/001/007/1051/1053
546.682'181.1:548.55

AUTHOR: Ugay, Ya. A.; Gordin, V. L.

TITLE: Growing indium phosphide single crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1051-1053

TOPIC TAGS: single crystal, indium, indium compound, phosphide, semiconductor single crystal, single crystal growth, single crystal growing, crystallization, crystal property, electric property, indium phosphide, melt crystallization, crystal electric property

ABSTRACT: Indium phosphide single crystals have been obtained by a slow (1.3—1.5 mm/hr) crystallization from melt of stoichiometric composition under 40 atm of phosphorus pressure in a thick-walled horizontal quartz ampul. Originally, the ampul contained indium and phosphorus separated by a drawn-out portion. The ampul was heated in a two-zone resistance furnace. A gradual increase in voltage made possible a gradual progress of crystallization front in the indium zone of the ampul. The advantages of this technique were stressed in comparison

Card 1/2

L 1855-66

ACCESSION NR: AP5022252

3

with the technique of pulling the crystal from the melt. The x-ray diffraction pattern showed that the ingot obtained was single crystalline over nearly 2/3 of its length. Single crystals 10—12 mm in diameter and 70—100 mm long were obtained. The crystals had an n-type conductivity, thermoelectric power of 150 μv/degree, carrier concentration of (2.0—3.0) x 10^{16} cm^{-3}, and a carrier mobility of 6000 $cm^2/v \cdot sec$ at room temperature. The latter value exceeded all previously known from the literature and indicated the good quality of the crystals. The electrical characteristics may be improved, e.g., by crucibleless zone-melting. Orig. art. has: 3 figures. [JK]

44.55

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 10Apr65 ENCL: 00 SUB CODE: SS

NO REF SOV: 001 OTHER: 004 ATD PRESS: 4087

Card 2/2

L 4027-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD
ACCESSION NR: AP5022253 UR/0363/65/001/007/1054/1056
546.682'181.1:536.495

45
44
13

AUTHOR: Ugay, Ya. A.; Bityutskaya, L. A.

TITLE: Thermal stability of indium phosphide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1054-1056

TOPIC TAGS: indium compound, phosphorus compound, thermal stability

ABSTRACT: A thermographic study of the thermal stability of indium phosphide was carried out with the aid of an FPK-55 pyrometer. The endothermic effect observed above 1000C on the heating curves of InP showed that it is accompanied by dissociation. The temperature of 1015 ± 4C was taken as the equilibrium value at which the dissociation of InP begins. Under conditions of a temperature drop which caused the condensation of the volatile component, the temperature of the start of the dissociation decreased. It is found that the dissociation of InP is accompanied by fusion of the original substance and of the reaction products. The dissociation proceeds according to the reaction

$$[InP]_s \rightleftharpoons \{In\}_l + 1/4\,(P_4)_g.$$

Card 1/2

L 4027-66
ACCESSION NR: AP5022253

The phosphorus observed below the equilibrium temperature of dissociation is thought to form as a result of a fractional vaporization of indium phosphide; in this process, the following equilibrium is established on the surface of solid InP:

$$[InP]_s \rightleftharpoons \{In\}_g + 1/4\ (P_4)_g.$$

Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 22Mar65 ENCL: 00 SUB CODE: IC, TD

NO REF SOV: 001 OTHER: 006

Card 2/2

L 2787-66 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACCESSION NR: AP5022260 UR/0363/65/001/007/1104/1108
546.682'19'18-165

20
19
B

AUTHOR: Ugay, Ya. A.; Goncharov, Ye. G.; Bolkhovitina, N. B.; Shvyreva, T. N.

TITLE: Preparation of InAs sub x P sub 1-x solid solutions of constant composition along the length of the ingot

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1104-1108

TOPIC TAGS: solid solution, indium alloy, arsenic, phosphorus alloy

ABSTRACT: The authors propose a simple method for preparing solid solutions of constant composition along the length of the ingot, and illustrate it with the synthesis of $InAs_xP_{1-x}$. The method in maintaining the concentration of arsenic and phosphorus, i.e., their partial pressures, constant during the entire course of crystallization of the solid solution in the gas phase. This is done by placing solid phosphorus and arsenic in the reaction vessel at some distance from the indium: at a constant temperature, not only the partial pressures of phosphorus and arsenic, but also their ratio remains constant. If necessary, this ratio can be varied by changing the temperature of the section of the reaction ampul which contains phosphorus and arsenic. The method is applicable only to the formation

Card 1/2

L 2787-66

ACCESSION NR: AP5022260

of isovalent solid solutions involving two volatile components; in the case of one such component, the method is not applicable, for example, to the preparation of $Ga_xIn_{1-x}As$ solid solutions of constant composition along the length of the ingot. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 03Mar65 ENCL: 00 SUB CODE: SS, IC

NO REF SOV: 006 OTHER: 007

Card 2/2 hd

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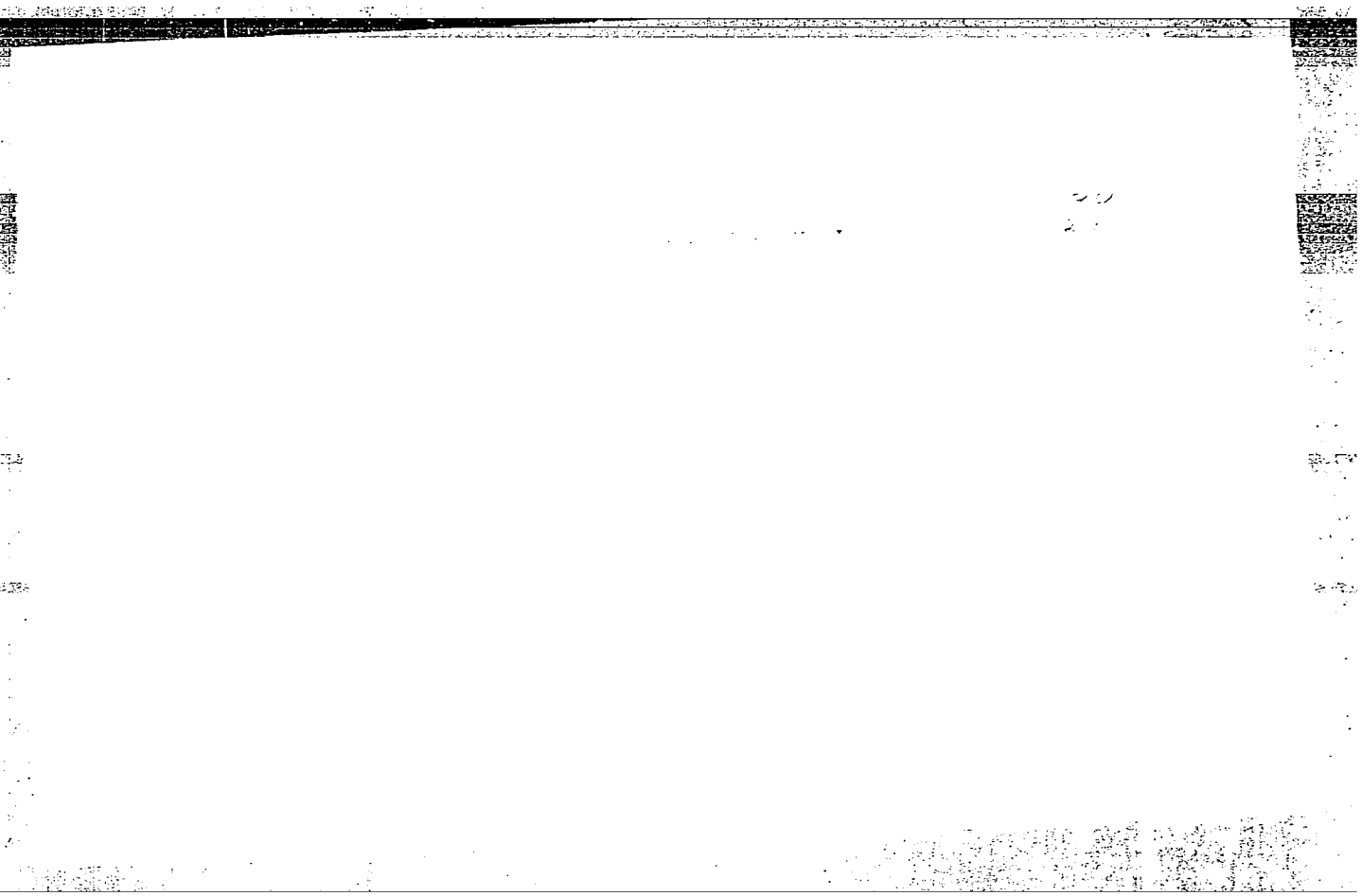
Card 2/2



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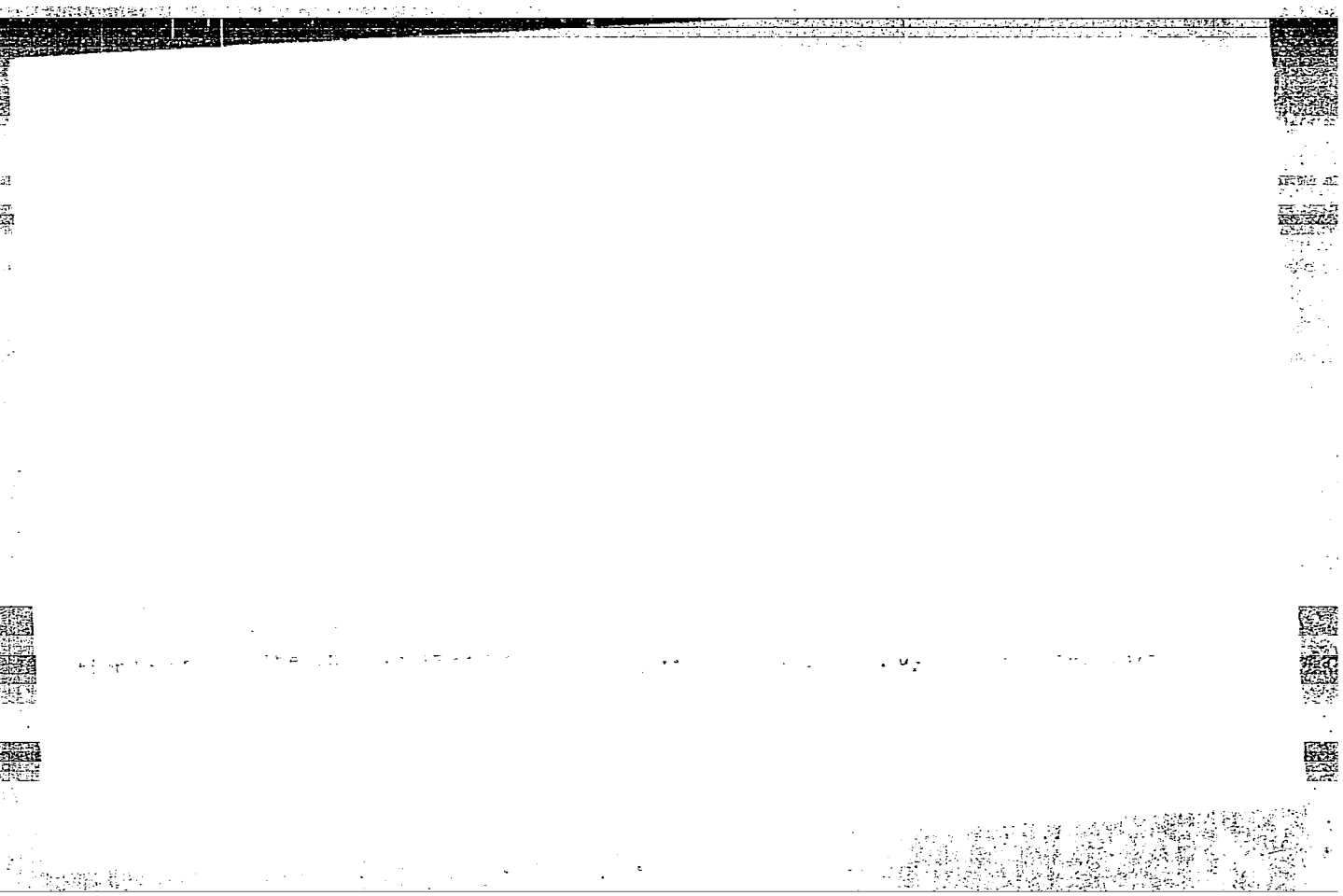

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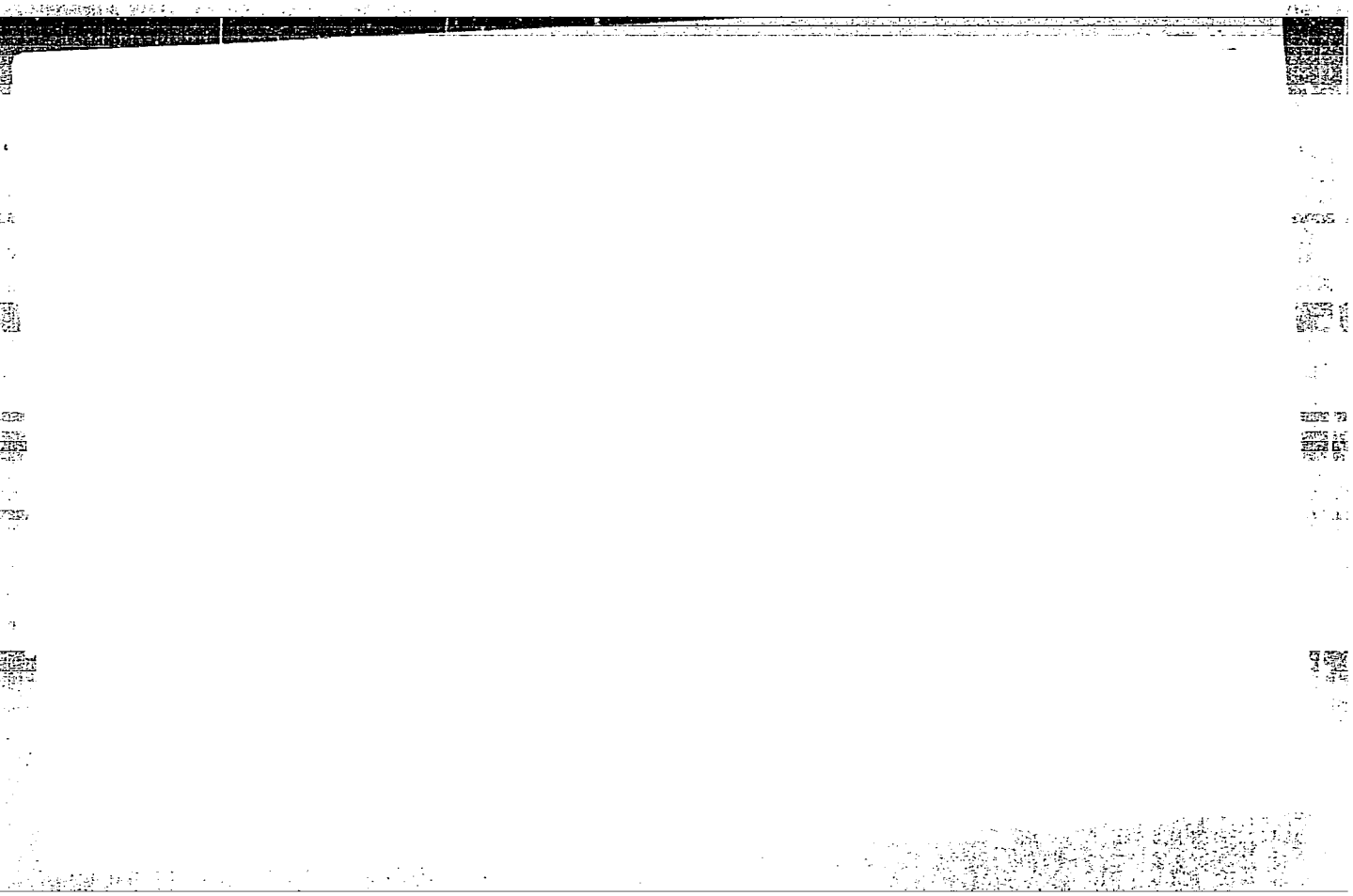

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820012-7"

UGAY, Ya.A.; ZAVAL'SKIY, Yu.P.; UGAY, V.A.; MOSTOVAYA, S.A.; BITYUTSKAYA, L.A.

Tin arsenide, a new intermetallic semiconductor. Dokl. AN SSSR 163 no.3: 663-666 Jl '65. (MIRA 18:7)

1. Voronezhskiy gosudarstvennyy universitet i Voronezhskiy tekhnologicheskiy institut. Submitted January 11, 1965.

UGAY, Ya.A.; ZAVAL'SKIY, Yu.P.; UGAY, V.A.; BOLKHOVITINA, N.B.

Production of indium phosphide by precipitation from a solution and some of its properties. Izv. AN SSSR. Neorg. mat. 1 no.5:663-667 My '65. (MIRA 18:10)

1. Voronezhskiy gosudarstvennyy universitet.

L 12897-66 EWT(m)/ETC(F)/EWG(m)/T DS
ACC NR: AP5027581 (A) SOURCE CODE: UR/0364/65/001/011/1374/1376

AUTHOR: Marshakov, I. K.; Ugay, Ya. A.; Vigdorovich, V. I.; Anokhina, M. I.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Effect of ammonium ion on hydrogen overvoltage η, 44,55

SOURCE: Elektrokhimiya, v. 1, no. 11, 1965, 1374-1376

TOPIC TAGS: magnesium, hydrogen, electrochemistry

ABSTRACT: The effect of ammonium ions on the rate of dissolution of magnesium and the kinetics of anodic and cathodic processes was studied. MG-1 magnesium containing 0.08% impurity was used in this study. The rate of dissolution of Mg, determined from chemical analysis of the solution for Mg, was found to be practically independent of the anion content, but increased rapidly upon the addition of ammonium ion. The corrosion of magnesium in aqueous solutions proceeds primarily with the depolarization of hydrogen. Consequently, the kinetics of the reduction of the hydrogen ion were investigated on pure resublimed magnesium and on nobler metals because in the dissolution of technical magnesium, cath-

Card 1/3 UDC: 541.138.3:546.11

odic reduction of the hydrogen ion proceeds primarily with respect to the noble metal impurities. Due to the high spontaneous dissolution currents of pure magnesium it was not possible to obtain the polarization of the electrode and the kinetics of hydrogen liberation could not be studied. The lowering of hydrogen overvoltage on other metals is shown in fig. 1. It is stipulated that the reduction of hydrogen proceeds by two reactions:

$$H_3O^+ + e^- \rightarrow \tfrac{1}{2}H_2 + H_2O \quad (1)$$

$$[NH_4^+]_{ads} + e^- \rightarrow \tfrac{1}{2}H_2 + NH_3 \quad (2)$$

where adsorbed ammonium ions play the role of an intermediate complex

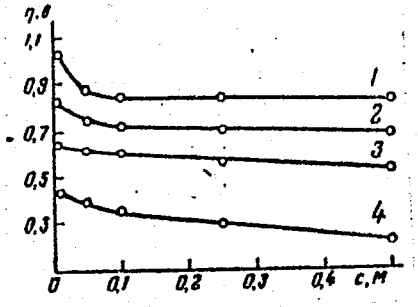

Fig. 1. Hydrogen overvoltage as a function of the concentration of ammonium ions at $i = 10^{-3}$ a/cm^2: 1--Zn; 2--Sn; 3--Fe; 4--Pt.

L 12897-66
ACC NR: AP5027581

which lowers the energy of activation for the reduction of hydrogen ions. Orig. art. has: 2 figures, 1 table.

SUB CODE: 20,11/ SUBM DATE: 28Jan65/ ORIG REF: 007/ OTH REF: 001

Card 3/3

L 15208-66 EWT(m)/T/EWP(t)/EWP(b) LJP(c) JD

ACC NR: AP6001298 SOURCE CODE: UR/0363/65/001/008/1323/1325

AUTHOR: Ugay, Ya. A.; Ignat'yev, N. A.; Marshakova, T. A.; Aleynikova, K. B.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Preparation of a single crystal of the intermetallic compound Cd_4Sb_3 and its properties

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 8, 1965, 1323-1325

TOPIC TAGS: cadmium compound, antimony compound, zone melting, single crystal growing

ABSTRACT: In order to select a method for preparing Cd_3Sb_3 single crystals, thermographic and x-ray diffraction studies were carried out to determine the temperature and concentration limits of existence of this compound. Four thermal effects were observed on the heating curves of alloys containing from 25 to 51 wt. % Sb: the first (a small endothermic effect) could not be identified; the second (exothermic) corresponds to the conversion $Cd_4Sb_3 \rightarrow 3CdSb + Cd$; the third (298C) was due to the fusion of the cadmium eutectic; the fourth (438C) was the fusion of CdSb. Zone melting was found to be the most suitable method for preparing Cd_4Sb_3 single crystals. Despite the imperfect structure of the crystals obtained, their electric parameters were more interesting than those of polycrystalline samples, because Cd_4Sb_3 single crystals contain an excess of antimony, which causes a higher carrier concentration. The structure of the compound Cd_4Sb_3 was refined: it was found to belong to the trigonal

Card 1/2 UDC 546.48'221:548.55

L 15208-66
ACC NR: AP6001298

system, Laue class $D_{3d} - \bar{3}m$. In the hexagonal derivation, the lattice parameters a = 13.04 Å, c = 22.45 Å. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11,20 / SUBM DATE: 18May65 / ORIG REF: 004 / OTH REF: 003

Card 2/2

SHATALOV, A.Ya.; TSYGANKOVA, L.Ye.; UGAY, Ya.A.

Anodic oxidation of some intermetallic compounds. Elektrokhimiia 1 no.9:1118-1123 S '65. (MIRA 18:10)

1. Voronezhskiy gosudarstvennyy universitet.

DOMASHEVSKAYA, E.P.; UGAY, Ya.A.

X-ray spectral study of the chemical bond in semiconductor compounds of aluminum. Izv. vys. ucheb. zav.; fiz. 8 no.6: 80-83 '65. (MIRA 19:1)

1. Voronezhskiy gosudarstvennyy universitet. Submitted February 22, 1964.

UGAY, Ya.A., AFINOGENOV, Yu.P.

Aleksandr Pavlovich Palkin, 1889-1964; an obituary. Zhur. neorg. khim. 10 no.2:313-318 F '65. (MIRA 18:11)

L 13854-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6002814 SOURCE CODE: UR/0078/66/011/001/0197/0198

AUTHORS: Ugay, Ya. A.; Gukov, O. Ya.; Ozerov, L. A.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Decomposition of indium and gallium phosphides with sodium hydroxide during heating

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 1, 1966, 197-198

TOPIC TAGS: gallium, indium, gallium compound, indium compound, sodium hydroxide, thermal decomposition

ABSTRACT: The reaction of InP and GaP with solid NaOH was studied as a function of temperature. Thermograms for the reactions of InP and GaP with solid NaOH were obtained, and a typical thermogram for the reaction of InP with NaOH is presented (see Fig. 1). The temperatures for the beginning of reaction for InP + NaOH, In + NaOH, GaP + NaOH, and Ga + NaOH are tabulated. It is suggested that the reaction between InP or GaP and NaOH proceeds according to the mechanism

$$4A^{III}P + 6NaOH + O_2 = 4A^{III} + 2PH_3 + 2Na_2PO_4,$$

where A^{III} is In or Ga.

Card 1/2 UDC: 546.681'181.1+546.682'181.1

L 13854-66
ACC NR: AP6002814

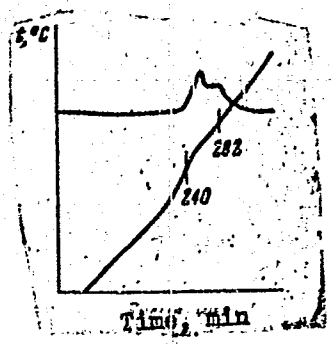

Fig. 1. Thermogram for the reaction InP with NaOH. 240C - beginning of interaction of InP with NaOH; 282C - beginning of interaction of reduced In with NaOH.

Orig. art. has: 1 table, 1 graph, and 1 equation.

SUB CODE: 07/ SUBM DATE: 23Oct64/ ORIG REF: 002/ OTH REF: 001

Card 2/2

L 17734-66 EWT(m)/EWP(t) IJP(c) JD/GS
ACC NR: AT6006177 SOURCE CODE: UR/0000/65/000/000/0347/0355

37
35
B+1

AUTHOR: Ugay, Ya. A.; Domashevskaya, E. P.; Marshakova, T. A.

ORG: none

TITLE: X-ray analysis of semiconducting cadmium compounds containing antimony, oxygen, and sulfur

SOURCE: Khimicheskaya svyaz' v poluprovodnikakh i tverdykh telakh (Chemical bond in semiconductors and solids). Minsk, Nauka i tekhnika, 1965, 347-355

TOPIC TAGS: x ray, semiconductor band structure, cadmium compound, antimony compound, oxygen compound, sulfur compound, x ray absorption spectrum

ABSTRACT: The location of the $L_{\beta 15,2}$ emission band of cadmium in CdSb, Cd_3Sb_2, Cd_4Sb_3, CdS, and CdO as compared to its location in metallic cadmium is studied by the Johann x-ray technique. The $3K_{\alpha I}$ line of arsenic was also used as a reference. The location of the fundamental L_{III}- absorption limit of cadmium in these compounds as compared to its location in the metal; was studied using the standard

Card 1/2

2

$L_{\alpha 1}$ line of antimony as a reference. The CdSb, Cd_3Sb_2, and Cd_4Sb_3 were prepared by fusion of stoichiometric amounts of 99.99%-pure cadmium with antimony containing less than $2 \cdot 10^{-3}$% contaminants. The CdS was prepared by precipitation with pure H_2S from $CdSO_4$-acetic acid solution. The CdO was prepared by decomposition of fresh $Cd(CO_3)_2$ at 550°C. It was found that the $L_{\beta 15,2}$-emission band and the L_{III}-absorption limit of cadmium in CdSb, Cd_3Sb_2, Cd_4Sb_3, and CdS are shifted toward lower wave region in comparison with the corresponding bands of metallic cadmium. No such shift was observed in the case of CdO. It was found that the magnitude of this shift per unit of effective valence declines with increasing ionic character of the chemical bond. In the semiconducting compounds, this shift becomes successively smaller in the following order: CdSb, Cd_3Sb_2, Cd_4Sb_3, CdS, and CdO. The energetic gap between the L_{III}-absorption limit and the $L_{\beta 15,2}$-emission band was found to be proportional to the width of the forbidden zone of a given compound. For the compounds in question, this gap increases with increasing ionic character of the chemical bond in a compound. The $L_{\beta 15,2}$-emission of Cd in its semiconducting compounds and in the metal are shown. Orig. art. has: 5 figures, 3 tables.

SUB CODE: 20, 11 SUBM DATE: 31May65/ ORIG REF: 005/ OTH REF: 008

Card 2/2

L 15544-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6002085 SOURCE CODE: UR/0139/65/000/006/0080/0083

AUTHORS: Domashevskaya, E. P.; Ugay, Ya. A.

ORG: Voronezh State University (Voronezhskiy gosuniversitet)

TITLE: X ray spectral investigations of the character of the chemical bond in semiconductor compounds of aluminum

SOURCE: IVUZ. Fizika, no. 6, 1965, 80-83

TOPIC TAGS: aluminum, aluminum compound, semiconductor alloy, x ray spectrum, chemical bonding

ABSTRACT: The authors have measured the relative energy positions of the $K_{\alpha 1,2}$ lines and the non-diagram lines $K_{\alpha 3}$ and $K_{\alpha 4}$ of aluminum in the compounds AlSb, AlP, AlN, Al_2O_3, and aluminum metal. The work was undertaken to determine the sign and the relative charge of the atoms A^{III} and B^{V} in $A^{III}B^{V}$ binary compounds as functions of the change in the character of the chemical bond in the analog series. The

Card 1/2

L 15544-66

ACC NR: AP6002085

emission lines were plotted by a primary method in first order reflection, using an x ray spectrograph. The results show that all the aluminum lines shift towards the shorter wavelengths on going from metallic aluminum to the compounds. This indicates that the aluminum has a positive charge in all the compounds. The aluminum remains trivalent in all compounds. The electronegativity of the partner of aluminum in the compounds was 1.8, 2.1, 3.0, and 3.5 for AlSb, AlT, AlN, and Al_2O_3 respectively. The corresponding forbidden bandwidths were 1.6, 3.0, 3.8, and 2.5 ev. It is concluded from the shift of the $K_{\alpha 1,2}$ lines (+ 0.16, +0.24, +0.32, and +0.48 ev for the same sequence) that the ionic components of these compounds amounts to 20, 30, 40, and 60 per cent respectively. The increase in the ionic components agrees with the increase in the widths of the forbidden bands, but only for the $A^{III}B^{V}$ compounds. No such correlation is observed for Al_2O_3. Orig. art. has: 1 figure and 2 tables

SUB CODE: 20/ SUBM DATE: 22Feb64/ ORIG REF: 007/ OTH REF: 011

OC 111/

Card 2/2

MARSHAKOV, I.K.; UGAY, Ya.A.; VIGDOROVICH, V.I.; ANOKHINA, M.I.

Effect of the ammonium ion on hydrogen overvoltage. Elektrokhimiia 1 no.11:1374-1376 N '65. (MIRA 18:11)

1. Voronezhskiy gosudarstvennyy universitet.

UGAY, Ya.A.; GUKOV, O.Ya.; OZEROV, L.A.

Decomposition of indium and gallium phosphides by caustic soda on heating. Zhur.neorg.khim. 11 no.1:197-198 Ja '66. (MIRA 19:1)

1. Voronezhskiy gosudarstvennyy universitet. Submitted October 23, 1964.

MARSHAKOV, I.K.; UGAY, Ya.A.; VIGDOROVICH, V.I.

Corrosion behavior of alloys of the system magnesium-tin in chloride solutions. Zhur. prikl. khim. 38 no.5:1026-1032 My '65. (MIRA 18:11)

1. Voronezhskiy gosudarstvennyy universitet.

L 47321-66 EWT(m)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/WW/JW/RM

ACC NR: AR6025758 SOURCE CODE: UR/0058/66/000/004/A074/A074

AUTHOR: Ugay, Ya. A.; Bityutskaya, L. A. 1 27 6 B

TITLE: Some problems in the thermochemistry of indium phosphide 27

SOURCE: Ref. zh. Fizika, Abs. 4A620

REF SOURCE: Sb. Simpozium. Protsessy sinteza i rosta kristallov i plenok poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 42-43

TOPIC TAGS: indium compound, phosphide, thermochemical property, temperature dependence, enthalpy, entropy

ABSTRACT: The authors obtained experimentally the most important thermochemical characteristics of InP; the temperature of the start of dissociation (1015 ± 4C), and the temperature dependence of the dissociation vapor tension. The pressure of the volatile component (P) was assumed in the closed volume on the basis of calculations. Starting from the obtained experimental data, an estimate was made of certain calculated thermodynamic and thermochemical constants of InP: standard enthalpies and entropy, and the isobaric-isothermal potential of the production reaction. On the basis of the investigations of the physicochemical properties of the In-P system, the authors consider the possibility of obtaining single crystals and films of stoichiometric composition from the gas phase up to 1000C temperature. The advantage of obtaining single crystals of InP from a melt with stoichiometric composition and from a melt containing an excess of P is demonstrated. [Translation of abstract]

SUB CODE: 20

Card 1/1 mjs

UGAY, Ya.; GUKOV, O.Ya.

Decomposition of zinc and cadmium phosphides by caustic soda on heating. Zhur.neorg.khim. 11 no.1:219-221 Ja '66. (MIRA 19:1)

1. Voronezhskiy gosudarstvennyy universitet. Submitted May 19, 1965.

L 29777-66 EWT(m)/T/EWP(t)/ETI LJP(c) JD
ACC NR: AP6015071 (A) SOURCE CODE: UR/0363/66/002/005/0876/0880

58
B

AUTHOR: Ugay, Ya. A.; Zyubina, T. A.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Continuous solid solutions in the $ZnAs_2$-$CdAs_2$ system and electric properties of $Zn_xCd_{1-x}As_2$ single crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 5, 1966, 876-880

TOPIC TAGS: zinc compound, cadmium compound, arsenide, solid solution, Hall constant, thermal emf, semiconductor single crystal, electric property, phase diagram, x ray diffraction analysis

ABSTRACT: The phase diagram of the $ZnAs_2$-$CdAs_2$ system was constructed on the basis of thermographic and x-ray analyses of samples which had undergone zone leveling. Continuous substitutional solid solutions were found to be formed in this system. X-ray diffraction analyses showed that the change in interplanar distances with the composition in $Zn_xCd_{1-x}As_2$ solid solutions obeyed Vegard's law. The $ZnAs_2$ structure is retained from 0 to 25% $CdAs_2$; solid solutions based on a tetragonal lattice with parameter ratio a/c = 0.57 are formed in the range of 40 to 100% $CdAs_2$, and defect

Card 1/2 UDC: 548.55

L 29777-66

ACC NR: AP6015071

structures based on lattices of the compounds $ZnAs_2$ and $CdAs_2$ are formed between 24 and 40% $CdAs_2$. $Zn_xCd_{1-x}As_2$ single crystals homogeneous in composition and electrical resistivity were prepared and their electrophysical properties were studied. Those which had a p-type conductivity showed an inversion of the Hall constant and differential thermal emf when the range of intrinsic conductivity was reached; n-type single crystals retained the charge carrier sign over the entire interval of measurements (from -10 to +550°C). The results obtained in the study confirm an earlier hypothesis that substances similar in crystallographic properties and bond type form continuous substitutional solid solutions even when their structures are different. Orig. art. has: 7 figures.

SUB CODE: 20,07/ SUBM DATE: 13Jun65/ ORIG REF: 006/ OTH REF: 006

Card 2/2

ACC NR: AP6012141 SOURCE CODE: UR/0413/66/000/007/0059/0059

28
B

INVENTOR: Ugay, Ya. A.; Gukov, O. Ya.

ORG: none

TITLE: Separation of cadmium. Class 40, No. 180342

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 59

TOPIC TAGS: cadmium, cadmium separation

ABSTRACT: An Author Certificate has been issued describing a method of separating cadmium from its salt, using potassium hydroxide at an elevated temperature. To increase the yield of metallic cadmium and improve its purity, cadmium phosphide (Cd_3P_2) is heated up to 350C with solid potassium hydroxide.

[LD]

SUB CODE: 07/ SUBM DATE: 26Apr65

Card 1/1

ACC NR: AR6030492 SOURCE CODE: UR/0275/66/000/006/B013/B014

AUTHOR: Ugay, Ya. A.; Bityutskaya, L. A.

TITLE: Some problems in the thermochemistry of InP

SOURCE: Ref. zh. Elektronika i yeye primenoniye, Abs. 6B90

REF SOURCE: Sb. Simpozium. Protsessy sinteza i rosta kristallov i plenok poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 42-43

TOPIC TAGS: indium ~~phosphide~~ compound, thermochemistry, phosphide

ABSTRACT: The most important thermochemical characteristics of InP, such as the temperature of initial dissociation (1015± 4C) and the effect of temperature on dissociation pressure were experimentally studied. On the basis of this experimental data, some thermodynamic and thermochemical constants of InP -- standard enthalpy, standard entropy, isobaric-isothermal reaction potential -- were estimated. Based on the investigated physico-chemical properties of the indium-phosphorus system, possibilities are considered for producing InP stoichiometric single crystals and films from a gas phase at temperatures up to 1000C. The production of InP single crystals from a stoichiometric melt and from a melt containing excess phosphorus is regarded as expedient. Ya. U., L. B. [Translation of abstract]

SUB CODE: ~~11,09~~ 07, 20

Card 1/1 UDC: 621.315.592.4:546.181'682

SOURCE CODE: UR/0000/66/000/000/0119/0126

AUTHOR: Ugay, Ya. A.; Domashevskaya, E. P.

ORG: none

TITLE: X ray spectral investigation of the character of the chemical bond in certain III - V semiconductor compounds

SOURCE: AN BSSR. Institut fiziki tverdogo tela i poluprovodnikov. Khimicheskaya svyaz' v poluprovodnikakh i termodinamika (Chemical bond in semiconductors and thermodynamics). Minsk, Nauka i tekhnika, 1966, 119-126

TOPIC TAGS: x ray spectroscopy, chemical bonding, semiconducting material, line shift, forbidden band

ABSTRACT: This is a continuation of earlier work (DAN SSSR v. 156, 430, 1964) dealing with the x ray spectra of semiconductor compounds. In the present investigation the authors studied the emission K spectra of aluminum and L spectra of antimony in certain III - V semiconductors. The main purpose was to determine the magnitude and sign of the charges of the atoms in the compound, the relation between the covalent, ionic, and metallic types of bond in the semiconductor, and the method whereby the bond acquires in the semiconductors a partially ionic character. The spectrum was obtained by a primary method in first order of reflection, using a Johann spectrograph with a gypsum crystal. The compounds tested were Al, Al, AlSb, AlP, AlN, and Al_2O_3, InSb, and GaSb. The line shifts, the ionicity, the electronegativity, the

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UDC: 541.57

L 34826-66 EWT(m)/T/EWP(t)/ETI IJP(c) DS/JD

ACC NR: AP6017607 (A) SOURCE CODE: UR/0364/66/002/002/0254/0258

AUTHOR: Marshakov, I. K.; Vigdorovich, V. I.; Vavresyuk, I. V.; Ugay, Ya. S.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Effect of electrolyte solution on phase transitions in intermetallic compounds

SOURCE: Elektrokhimiya, v. 2, no. 2, 1966, 254-258

TOPIC TAGS: intermetallic compound, electrolyte, phase transition, magnesium alloy, x-ray analysis

ABSTRACT: Various alloys are treated in a 0.1 *N* HCl solution for periods ranging from 10 minutes to 6 hours to study the effect of electrolyte solutions on phase transitions of intermetallic compounds. Chemical analysis was used for studying the soluble products of the interaction, while x-ray techniques were used for analyzing the insoluble products. An RKD camera was used with copper emission ($\lambda K\alpha$-1.537 A). Exposure time was 5-6 hours. The following compounds were studied: MgZn, $MgZn_2$, Mg_2Cu, $MgCu_2$, Mg_2Sn, Mg_3Sb_2, In_2Bi and InBi. It was found that the intermetallic compounds MgZn and $MgZn_2$ dissolve uniformly, i. e. both components pass into solution in the same ratio in which they are present in the alloy. The dissolution of Mg_2Cu and $MgCu_2$ is selective--only the magnesium passes into solution, and the surface of the specimen is covered with a film which consists of metallic copper in the case of $MgCu_2$, and of a combin-

Card 1/2 UDC: 541.13

L 34826-66

ACC NR: AP6017607

ation of metallic copper and $MgCu_2$ in case of Mg_2Cu. The formation of intermediate intermetallic compounds which are rich in the noble component may also be observed during dissolution of In_2Bi. Phase transitions with the formation of the noble component take place when Mg_2Sn and Mg_3Sb_2 are treated in hydrochloric acid, with the anitmony passing into solution in quantities of 8-10% while the tin concentration in solution is only slightly less than its content in the alloy. The experimental data indicate that the formation of the new phase may be due to rearrangement of a surface layer with a defective crystal lattice, or to electrochemical reduction of the noble ions. Orig. art. has: 2 tables.

SUB CODE: 20, 11/ SUBM DATE: 19Feb65 / ORIG REF: 004/ OTH REF: 001

Card 2/2

UGEVSKIY, A.M.; SOBINOV, K.P. (Moskva)

Steady-state electromagnetic processes in a full-wave rectifier with a center tapped transformer. Elektrichestvo no.5:16-23 My '61. (MIRA 14:9)

(Electric current rectifiers)

UGOLA, H.;MIROWSKI, Z.

The influence of water erosion on the morphology and some chemical properties of soils on a few morainal hills of the Masurian Lakes. p. 91.

GOSPODARKA WODNA. (Naczelna Organizacia Techniczna) Warszawa, Poland.
Vol. 19, no. 2, Feb. 1959.

Monthly list of East European Accessions Index, (EEAI), LC, Vol. 8, no. 6, June 1959
uncla.

UGHY, J.

"The administration of innovations is still bureaucratic."

p. 14 (Ujitok Lapja) Vol. 9, no. 21, Dec. 1957
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

UGINCHUS, A.A.

UGINCHUS, A.A., professor, doktor tekhnicheskikh nauk; LATYSHENKOV, A.M., kandidat tekhnicheskikh nauk, redaktor; LAKHNOV, V.S., tekhnicheskiy redaktor

[Using the index of potential current energy conservation in hydraulic engineering] Primenenie pokazatelia sokhraneniia potentsial'noi energii potoka v inzhenernoi gidravlike. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1951. 147 p. (MLRA 10:1)
(Hydraulic engineering)

UGINCHUS, A.A., doktor tekhnicheskikh nauk, professor, redaktor; LAGAR'KOV, [illegible], inzhener, nauchnyy redaktor.

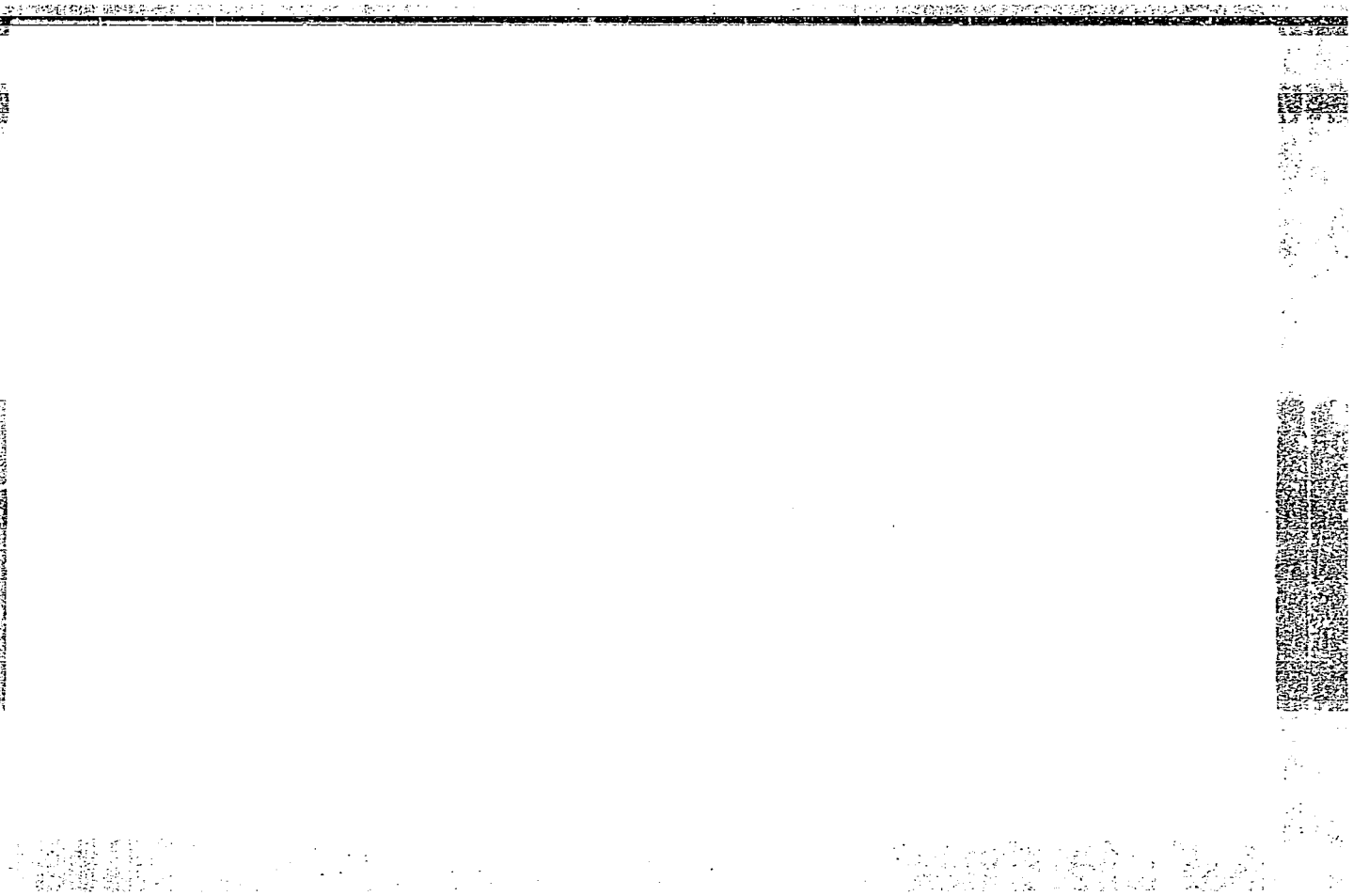
[Planning and building earthwork] Proektirovanie i stroitel'stvo zemlianykh sooruzhenii. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 183 p. (MLRA 7:5)

(Earthwork)

UGINCHUS, A. A.

UGINCHUS, A.A., professor, doktor tekhnicheskikh nauk; OBRAZKOV, S.S., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor.

[Hydraulics and hydraulic machines] Gidravlika i gidravlicheskie mashiny. Moskva, Gos. energ. izd-vo, 1953. 359 p. (MLRA 7:7)
(Hydraulics) (Hydraulic machinery)



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857820012-7"

UGINCHUS, A.A., doktor tekhnicheskikh nauk, professor.

New method of planning canals with an economical cross section. Gidr. stroi. 22 no.7:30-35 Jl '53. (MLRA 6:7)
(Canals)

UGINCHUS, A.A., professor, doktor tekhnicheskikh nauk, redaktor; LAGAR'KOV, N.I., inzhener, nauchnyy redaktor; SAFONOV, P.V., redaktor; DAKHNOV, V.S., tekhnicheskiy redaktor

[Research on hydraulic installations] Issledovanie gidrouslov. Pod obshchei red. A.A.Uginchusa. Moskva, Gos. izd-vo lit-ry po stroitel'-stvu i arkhitekture, 1954. 127 p. (MLRA 8:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii. Ukrainskoye otdeleniye.
(Hydraulic engineering)

UGINCHUS, A.A., professor; BOMBCHINSKIY, V.P., inzhener; IZBASH, S.V., professor, doktor tekhnicheskikh nauk, redaktor.

(Control and measuring apparatus for hydraulic installations)
Kontrol'no-izmeritel'naia apparatura gidrotekhnicheskikh sooruzhenii. Moskva, Gos. izd-vo po stroitel'stvu i arkhitekture, 1954. 258 p.
(Hydraulic engineering) (MLRA 7:7)

UGINCHUS, Aleksandr Antonovich; prof., doktor tekhn.nauk; DALENKOV, Yu.N., doktor tekhn.nauk, prof., retsenzent; GOREIKIN, A.V., kand.tekhn. nauk, red.; ZALOGIN, N.S., red.izd-va; RUDENSKIY, Ya.V., tekhn.red.

[Hydraulics, hydraulic machinery and fundamental of watersupply for agriculture] Gidravlika, gidravlicheskie mashiny i osnovy sel'skokhoziaistvennogo vodosnabzheniia. Kiev, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 251 p. (MIRA 11:2)
(Hydraulic engineering) (Water supply, Rural)

14(10)

SOV/98-59-2-20/22

AUTHOR: Uginchus, A.A., Doctor of Technical Sciences, Professor

TITLE: P.S. Neporozhniy. The Erection of Large Concrete and Reinforced Concrete Water Engineering Structures (Bases of a Rational Technology), Gostekhizdat of the Ukraine, 1958 (P.S. Neporozhniy. Vozvedeniye krupnykh betonnykh i zhelezobetonnykh gidrotekhnicheskikh sooruzheniy (Osnovy ratsional'noy tekhnologii), Gostekhizdat Ukrainy, 1958)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 2, p 62-63 (USSR)

ABSTRACT: This is a review of the above mentioned book.

Card 1/1

UGINCHUS, Aleksandr Antonovich. prof., doktor tekhn. nauk; Prinimal uchastiye ALESHKO, P.I., inzh., star.prep.; RAFALES-LAMARK, E.E., dots., kand. tekhn. nauk, retsenzent; TRET'YAKOVA, A.N., red.; ZADOROZHNYY, V.S., tekhn. red.

[Hydraulics and hydraulic machinery] Gidravlika i gidravlicheskie mashiny. Izd.2., perer. i dop. Khar'kov, Izd-vo Khar'kovskogo gos. univ. im. A.M.Gor'kogo, 1960. 358 p. (MIRA 14:9)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury USSR (for Uginchus). 2. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina (for Aleshko).
(Hydraulics) (Hydraulic machinery)

UGINCHUS, Aleksandr Antonovich; NEDRIGA, V.P., red.; BORUNOV, N.I., tekhn. red.

[Coputing percolation through earth dams] Raschet fil'tratsii cherez zemlianye plotiny. Moskva, Gos. energ. izd-vo, 1960. 140 p. (MIRA 14:5)

(Dams) (Soil percolation)

KOLOBANOV, S.K., kand. tekhn. nauk; KRASNITSKIY, M.S., kand. tekhn. nauk; MIZETSKIY, B.G., inzh.; UGINCHUS, A.A., doktor tekhn. nauk, red.; SURYGINA, E., red.; NARINSKAYA, A., tekhn. red.

[Hydraulics of structures and pipes] Gidravlika sooruzhenii i truboprovodov; sbornik statei. Pod red. A.A.Uginchusa. Kiev, Gos. izd-vo lit-ry po stroit. i arkhit. USSR, 1961. 122 p. (MIRA 14:6)

1. Akademiya stroitel'stva i arkhitektury USSR. Institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.

(Hydraulics)

BOL'SHAKOV, Valeriy Alekseyevich, kand. tekhn. nauk; UGINCHUS, A.A., doktor tekhn. nauk, prof., red.; ANDREYEV, O.V., red.

[Hydraulic engineering structures on automobile roads] Gidrotekhnicheskie sooruzheniia na avtomobil'nykh dorogakh. Moskva, Transport, 1965. 319 p. (MIRA 18:7)

BOGOMOLOV, Anatoliy Ivanovich, prof.; MIKHAYLOV, Konstantin Aleksandrovich, prof. Prinimal uchastiye SHATAN, V.S., kand. tekhn. nauk; UGINCHUS, A.A., prof., doktor tekhn. nauk, retsenzent; KISELEV, P.G., dots., kand. tekhn. nauk, retsenzent; AL'TSHUL', A.D., retsenzent; OBREZKOV, S.S., inzh., nauchn. red.

[Hydraulics] Gidravlika. Moskva, Izd-vo lit-ry po stroit. 1965. 632 p. (MIRA 18:7)

VANDOLOVSKIY, O. [Vandolovs'kyi, O.], inzh.; LADYZHENSKIY, V. [Ladyzhens'kyi, V.], inzh.; UGINCHUS, D. [Uhinchus, D.], inzh.

Conference on problems of the use of carbonate aggregates. Bud. mat.i konstr. no.5:62-64 S-O '62. (MIRA 15:11)
(Rocks, Carbonate) (Aggregates (Building materials)--Congresses)

UGLANOV, I.N.

Principal stages in the relief formation in the upper trans-Angara region. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.1:194-200 '58. (MIRA 12:2)

1. Irkutskiy universitet, geograficheskiy fakul'tet, kafedra fizicheskoy geografii.
(Angara Valley--Physical geography)

UGLANOV, I.N.

Formation and development of swamps on examples of the Irkutsk forest-and-steppe region. Nauch. dokl. vys. shkoly; geol.-geog. nauki no.3:162-165 '58. (MIRA 12:1)

1.Irkutskiy universitet, geograficheskiy fakul'tet, kafedra fizicheskoy geografii.
(Irkutsk Province--Swamps)

UGLANOV, I.N.

Development of swamps and some problems concerning drainage in the Kuda River basin. Trudy Irk. un. 24:99-114 '58.
(MIRA 14:7)

(Kuda Valley--Swamps)

UGLANOV, I.N.

Hydrogeological regions of the Kuda River basin. Trudy Irk. un. 115-123 '58. (MIRA 14:7)
(Kuda Valley--Water, Underground)

UGLANOV, I.N.

Karst and permafrost relief in the Kuda-Manzurka interfluve.
Trudy Irk. un.24:125-141 '58. (MIRA 14:7)
(Irkutsk Province—Karst)
(Irkutsk Province—Frozen ground)

UGLANOV, I.N., Cand Geol-Min Sci —(diss)" Geomorphology, surface and subterranean waters of the Pribaykal part of the Irkutsk coal-bearing basin." Irkutsk, 1959. 15 pp (Min of Higher Education USSR. Irkutsk State U im A.A. Zhdanov), 150 copies

Bibliography: pp 14-15 (14 titles) (KL,29-59, 126)

SOV/26-59-2-35/53

2(4,5,8)
AUTHOR: Uglanov, I.N.

TITLE: The Ulangin Cave (Ulanginskaya peshchera)

PERIODICAL: Priroda, 1959, Nr 2, pp 108-109 (USSR)

ABSTRACT: The author describes the Ulangin Cave he discovered in the summer of 1956, 3 km south of the hamlet of Nizhne-Ulangin, about 30 km north of Ust'-Orda in the Irkutsk Oblast', at an absolute altitude of 800 m. Its relative altitude above the bottom of the nearby Khul'she-Gol valley is 150 m. The local population knew about the existence of the cave, but had only legendary information about its origin. The funnel-like opening is of oval shape and has a diameter of 2.5 to 3 m. On the limestone bottom of the funnel, there is a vertical joint crack 1.5 m in length and up to 0.5 m wide directed 170° southeast. Up to a depth of 3 to 4 m, the shape and dimensions of the joint crack do not change greatly. Further downward the passage enlarges gradually in size to form a subterraneous chamber of 18 m in

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height, 8 m length and up to 6 m in width. At the very deepest point of this chamber, a natural "manhole" of 1.5 m length and a minimum height of 0.5 m leads to another wedge-shaped chamber which also follows the general jointing of the rocks (figure 1). This second chamber is over 15 m long, 2 to 2.5 m wide and about 13 m high at the apex of the acute-angular walls. The bottom of the chamber is filled with lumps and rubble of limestone. The walls and the vault are also made of calcareous rocks. There are no further exits from this chamber. The temperature at the cave bottom was 2.5°C. The author concludes that the Ulangin Cave is a limestone cave having been made by the solvent action of circulating ground water, although there is no water in the cave any more, just a few faint traces of its former presence. On the other hand, the shape of the chambers and many features on the bottom walls and vaults seem to point at an origin due to a mechanical destruction of the rocks. This could have been caused by the action of a large body of water over a long period

of time. Certain analogies described in literature /Ref 1/, would allow the assumption that the water table, which at present is 130 to 150 m beneath the bottom of the cave, during a former age was only 30 to 50 m beneath the cave bottom. But this has to be established more accurately by a closer study of the cave. The author also mentions that remnants of bones of animals and man of our geological age are contained in the bottom deposits of the cave. There is 1 diagram and 1 Soviet reference.

ASSOCIATION: Irkutskiy gosudarstvennyy universitet im. A.A. Zhdanova (Irkutsk State University imeni A.A. Zhdanov)

PINNEKER, Yu.V.; UGLANOV, I.N.; SHURANOVA, N.N.

Underground waters of Irkutsk Province. Mat. Kom. po izuch. podzem. vod. Sib. i Dal' Vost. no.2:101-111 '62. (MIRA 17:8)

UGLANOV, M.

Interesting exhibits. Prof.-tekh.obr. 11 no.4:31 Jl '54.(MLRA 7:9)
(Riga--Technical education--Exhibitions) (Technical education--Exhibitions--Riga)

85231

S/048/60/024/006/024/030/XX
B013/B067

24.3500

AUTHORS: Naboykin, Yu. V., Dobrokhotova, V. K., and Uglanova, V. V.

TITLE: Organic Compound Single Crystals, Their Luminescence and Scintillation Properties

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 6, pp. 744-748

TEXT: The authors attempted to estimate the effect of some factors on the energy transfer and, consequently, also on the scintillation properties of organic single crystals containing admixtures. They studied single crystals bred by Stokbarger's method from carefully purified naphthalene and diphenyl. The admixtures chosen were aromatic hydrocarbons and their derivatives. The light yield of the scintillations was determined from the photocurrent of an ФЭУ-29 (FEU-29) photomultiplier with respect to a calibrated single crystal of stilbene. The luminescence spectra were measured by an СФ-4 (SF-4) spectrophotometer having a special attachment and combined with an ФЭУ-18 (FEU-18) photomultiplier (Ref. 6). Fig. 1 shows the relative light yield as a function of the admixture concentration.

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85231

Organic Compound Single Crystals, Their Luminescence and Scintillation Properties S/048/60/024/006/024/030/XX B013/B067

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These admixtures were added to the melt before the growth of interesting single crystals. It may be seen that the light yield attains its maximum at a certain concentration, after which it increases no longer. The concentration dependence of the relative quantum yield of the photoluminescence of compound single crystals is almost the same as that of the light yield of the scintillations (Fig. 2). Spectral curves of different doped single crystals of naphthalene are shown in Fig. 3. As may be seen from a table and from Fig. 1, single crystals on the basis of naphthalene and diphenyl have relatively high scintillation properties. The solubility of their admixtures in the solid phase differs largely. To estimate the effect of the admixtures on the scintillation properties and, consequently, on the energy transfer, also the actual value of the concentration of the admixture dissolved in the solid phase must be known. In studying the solubility of admixtures in the solid phase, the causes leading to the saturation of the luminescence yield with an increase of concentration must be eliminated. On the one hand, the effect mentioned may be related to the solubility limit of the admixture ($K \ll 1$); on the other, a resonance interaction between the dissolved molecules is possible which leads to a dampening of luminescence depending on the concentration. The investigations

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into this subject are being continued. The authors thank L. Ya. Malkes for making available some samples, as well as A. M. Ratner and I. O. Kulik for a discussion of the results. A. F. Prikhot'ko and A. I. Kitaygorodskiy are mentioned. The present paper was read at the Eighth Conference on Luminescence (Molecular Luminescence and Luminescence Analysis) which took place in Minsk from October 19 to 24, 1959. There are 3 figures, 1 table, and 6 references: 5 Soviet.

21.6000

39127
S/058/62/000/006/063/136
A061/A101

AUTHORS: Naboykin, Yu. V., Dobrokhotova, V. K., Uglanova, V. V., Soyfer, L. M.

TITLE: The growth of organic single crystals with impurities and study of their optical properties

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 11, abstract 6E87 (In collection: "Rost kristallov. T. 3". Moscow, AN SSSR, 1961, 326 - 331. Discuss., 501 - 502)

TEXT: The scintillation properties of naphthalene and diphenyl single crystals with anthracene and salicylic acid amide impurities, grown by Stokbarger's method, are considered. Crystals 14 mm in diameter and 10 mm high were obtained. The use of some of them in scintillation counters is shown to be practically possible. It has been found that the solubility of the impurity is an important factor in the production of organic mixed single crystals for use in counters. It has been established that in molecular crystals growing from a melt, impurities usually enter the crystal lattice as individual molecules.

[Abstracter's note: Complete translation]

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S/058/62/000/006/066/136
A061/A101

AUTHORS: Aleksandrov, B. S., Dobrokhotova, V. K., Naboykin, Yu. V., Spendiarov, N. S., Uglanova, V. V.

TITLE: Zone purification of substances for scintillation single crystals

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 12, abstract 6E99 (In collection: "Rost kristallov. T. 3". Moscow, AN SSSR, 1961, 332 - 337. Discuss., 501 - 502)

TEXT: A system of short tubular heaters on a vertical unit was used to perform the zone purification of naphthalene, stilbene, anthracene, and other substances for scintillation single crystals. The effect of purification proved positive in nearly all cases. In particular, the intensity of luminescence in the maximum was enhanced by 1.5 - 2.5 times.

[Abstracter's note: Complete translation]

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35782
S/120/62/000/001/012/061
E039/E520

21.6000

AUTHORS: Naboykin, Yu.V., Dobrokhotova, V.K., Uglanova, V.V., Zadorozhnyy, B.A. and Malkes, L.Ya.

TITLE: New organic single crystal scintillators

PERIODICAL: Pribory i tekhnika eksperimenta, v.7, no.1, 1962, 57-59

TEXT: Anthracene is one of the most widely used scintillation crystals because of its high light output. However, there are difficulties associated with the preparation of single crystals of anthracene and it is chemically unstable, hence with long usage the single crystals deteriorate. Stilbene only has about half the light output of anthracene but it is cheap and is therefore widely used. Other crystals such as tolane have a low light yield so that efforts were made to discover new scintillator materials. The effect of small admixtures on the luminescent properties of crystals has been investigated by a number of authors and in this paper is given a summary of all the data on the scintillation efficiency of the single crystals investigated. The light yield compared with stilbene is given and also the optimum concentration of admixture and the maximum in the radiated spectrum. It is shown

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that single crystals of naphthalene with 1,2 - di(β-napthyl) ethylene and n-phenyl-stilbene admixtures not only have a high light yield (150% of stilbene) but have a luminescence time no greater than stilbene. They are also cheap and hence should be widely used. Single crystals of diphenyl and diphenylene oxide have the advantage over naphthalene of being stable in air but have a lower light output. The dependence of light output on concentration of admixture is shown graphically. The addition of about 0.1% of 1,2 - di(β-napthyl)-ethylene or 1-(β-napthyl)-2-(n-biphenyl)-ethylene to napthalene produces the maximum increase in sctillation efficiency. The luminescent spectra of these new materials is also presented and it is apparent that the maxima in the spectra coincide with the region of maximum sensitivity of antimony-cesium photocathodes. There are 3 figures and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv
(All Union Scientific Research Institute on Single Crystals, Scintillating Materials and Specially Pure Chemical Materials)

Card 2/2

SUBMITTED: June 19, 1961

S/051/62/012/005/020/021
E036/E118

AUTHORS: Naboykin, Yu.V., Dobrokhotova, V.K., and Uglanova, V.V.

TITLE: The dependence of luminescent output of mixed single crystals on the impurity concentration

PERIODICAL: Optika i spektroskopiya, v.12, no.5, 1962, 649-651

TEXT: The scintillation output from single crystals of naphthalene excited by γ-quanta has been investigated as a function of the concentration of phenyl-diphenylyl-ethylene and of ββ'-dinaphthylethylene. The first of these impurities is hardly soluble (distribution coefficient $K = 10^{-2}$) and the other very soluble ($K > 1$). The maximum impurity concentration was approximately 10^{-4} mole per mole of the naphthalene. It is deduced from the experimental results that the excitons, which transport energy in the crystal, are more easily trapped at centres formed by the less soluble impurities, which distort the surrounding lattice. This is anticipated from the theory. There are 2 figures.

SUBMITTED: November 9, 1961

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S/081/62/000/015/002/038
B168/B101

9,7000

AUTHORS: Aleksandrov, B. S., Dobrokhotova, V. K., Naboykin, Yu. V., Spendiarov, N. S., Uglanova, V. V.

TITLE: Zonal purification of substances for scintillating single crystals

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1962, 30, abstract 15B182 (Sb. "Rost kristallov. v. 3", M., AN SSSR, 1961, 332 - 337)

TEXT: An apparatus for purifying substances obtained by fractional recrystallization from a fusion (zonal melting method) was developed. Zonal melting as a method of fine purification can be used for various organic substances. It was used for purifying the following substances which are scintillation materials: naphthalene, stilbene, anthracene, di-β-naphthyl ethylene, 2,5-dibiphenylyl-1,3,4-oxadiazol, 2,5-di-α-naphthyl-1,3,4-oxadiazol and phenanthrene with impurities. The effect of zonal purification was observed from the formation of the coarse-grained structure and from the increase in intensity of luminescence. As the degree of zonal purifi-

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Zonal purification of ...

cation decreases sharply if the raw material is highly impure, purification by chemical methods is advisable before applying the zonal melting method. [Abstracter's note: Complete translation.]

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41345

S/081/62/000/017/010/102
B166/B180

18 9500

AUTHORS: Naboykin, Yu. V., Dobrokhotova, V. K., Uglanova, V. V., Soyfer, L. M.

TITLE: Growing organic single crystals with admixtures and a study of their optical properties

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1962, 34, abstract 17B204 (In collection: Rost kristallov. v. 3. M., AN SSSR, 1961, 326-331. Discuss. 501-502)

TEXT: A number of mixed organic single crystals based on naphthalene and diphenyl were prepared and their scintillation properties examined. The possibility of practical application of some of these single crystals in scintillation counters is shown and reasons for the concentration quenching of the scintillations are established. In some cases the actual concentration of impurity in the solid phase and the impurity distribution along the growth axis of the single crystal are determined. It is noted that the solubility of the admixture in

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Growing organic single crystals ...

the single crystal depends upon the dimensions and shape of the molecules of both the base and the admixture. In molecular crystals grown from the melt impurities usually enter the crystal lattice in the form of individual molecules. [Abstracter's note: Complete translation]

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ACC NR: AT6010456 SOURCE CODE: UR/3119/65/000/003/0027/0031

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B+1

AUTHORS: Panova, A. N.; Uglanova, V. V.; Charkina, T. A.

ORG: [Charkina] All Union Scientific Research Institute of Single Crystals, Khar'kov (Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov)

TITLE: Optical properties of x-irradiated LiF crystals of different purity 27 27

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 3, 1965. Ionyye kristally (Ionic crystals), 27-31

TOPIC TAGS: lithium fluoride, x ray irradiation, light absorption, crystal impurity, alkali halide, luminescence spectrum, crystal growing, crystal, optic property

ABSTRACT: In view of the lack of unambiguous data concerning the connection between the irradiation dose on the intensity of additional absorption in LiF crystals, the authors investigated the optical properties of LiF crystals of different purity exposed to the same x ray dose, since it is known that the intensity instability of the additional absorption in alkali-halide crystals depends to a considerable degree on

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impurities present. The crystals were grown by the Kyropoulos method in an air atmosphere, and by the Stockbarger method in vacuum. The optical absorption is measured with a vacuum spectrograph and a spectrophotometer and the luminescence excitation spectra were measured with apparatus consisting of two monochromators and a photomultiplier. An incandescent lamp was used for the excitation. Copper x-radiation was applied for sixty minutes. The irradiation gave rise to F and M bands at 250 and 445 nm respectively, in additional to some secondary effects. The crystals with smaller amounts of impurities had greater stability against irradiation in the region of vacuum ultraviolet and had lower absorption intensity in the F and M bands. The presence of impurities also effected the excitation spectra of the observed luminescence and the time during which the optical absorption of irradiated crystals stored in darkness remained unchanged. It is concluded that the purity of the initial raw material and the method of growing greatly influence the optical properties of x-irradiated crystals. The authors thank L. M. Soyfer and A.I. Chubenko for help with the work. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20/ ORIG REF: 001/ OTH REF: 002 /SUBM. DATE:00

Card 2/2 BLG

UGLAVAVA, M. KH.

"Occurrence of rickets and its forms in Gruzinsk SSR," Authors: M. Kh. Uglavava, I. K. Pagava, T. G. Kvezereli-Kopadze (and others) -- In index: M. Kh. Uglavava, Trudy VI Vsesoyuz. s'yezda dat. vrachey, posvyashch. pamyati prof. Filatova, Moscow, 1948, p. 218-20

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

YUGOSLAVIA

Ardoje UGLESIC and Spasko STOJANOV, Department of Internal Medicine (Interni Odjel) Chief (Sef) Dr Nona NIKOLIC, and Department of Neuropsychiatry (Neuropsihijatriski odjel), Chief Primarius Dr Djuro KARNIKSKI, General Hospital (Opca bolnica), Dubrovnik.

"Psychic Disturbance After Apparent Death and Intracardiac Injection of Epinephrine."

Belgrade, Srpski Arhiv za Celokupno Lekarstvo, Vol 91, No 1, Jan 63; pp 99-101.

Abstract [German summary modified]: Woman of 60 went into apparent clinical death during physical examination; some vital functions were revived after 6 minutes and 2 intracardiac injections of epinephrine 1 ml. each. The return of pulse and respiration were soon followed by extreme motor agitation accompanied by signs of hallucination. She never recovered consciousness, died 6 hours later. Toxic effects of the epinephrine on CNS are blamed for the agitation.

1/1

UGLESIC, B.

The nature and quality of post-traumatic neurotic states in industrial workers. Arh hig rada 11 no.3:237-241 '60.

1. Brodogradiliste, Split.

(NEUROSES) (ACCIDENTS INDUSTRIAL complications)

UGLESIC, B.; LUKSIC, P.

Generalized neurofibromatosis (m. Recklinghausen). Neuropsihijatrija 9 no.2/3:225-230 '61.

1. Iz Neurolosko-psihijatrijskog odjela Opce bolnice u Splitu (Sef: Dr. Viktor Ostrovidov).
(NEUROFIBROMATOSIS case reports)